



SNOHOMISH COUNTY FLOOD SAFETY BULLETIN

What you can do to minimize loss from floods

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You are receiving this bulletin because your property is located in or near a floodplain, which is the low lying land near a river or lake that is prone to being inundated during times of high water.

Your property has the potential for being damaged by floods due to its location. This brochure is intended to provide you with information on how to protect yourself and your property before, during, and after a major flood.

CONTACT INFORMATION

For All Snohomish County Residents

Note: Additional information is available on the next page for citizens living within city limits.

River Data & Forecasts

Flood Emergency Information

- 24-hour hotlines with updated information during floods:
 - Skykomish, Snoqualmie, and Snohomish Rivers, 425-388-3653
 - Stillaguamish and Sauk Rivers, 425-388-3702
- Snohomish County Flood Warning and Preparedness Information: www.floods.surfacewater.info
- Snohomish County Emergency Road Closures: www.co.snohomish.wa.us, search "road closures"

National Weather Service (NWS) Official Flood Watches, Warnings and Forecasts

- Seattle Forecast Office: www.weather.gov/seattle
- www.nws.noaa.gov

Radio Emergency Alert System: 710 AM (KIRO)

Real-Time River Data Sites

- NWS–Northwest River Forecast Center): www.nwrfc.noaa.gov/
- USGS: <http://waterdata.usgs.gov/wa/nwis/current?type=flow>
- NWS–Advanced Center for Hydrologic Prediction: <http://ahps2.wrh.noaa.gov/ahps2/index.php?wfo=sew>
- Corps of Engineers: www.nwd-wc.usace.army.mil/nws/hh/index.html

FEMA (Federal Emergency Management Agency)

- Flood insurance, 800-611-6123 (or call your insurance agent)
- Information on floodproofing and flood protection, 800-480-2520
- www.fema.gov/business/nfip

Sandbag Supplies

- **Purchase sandbags**
 - Cenex Co-op, 425-259-5571
 - Everett-Snohomish Co-op, 360-568-2104
 - Fisher Bag of Seattle, 206-575-4888
- **Purchase sand**
 - Riverside Sand and Gravel, Snohomish, 425-334-5003
 - Builders Sand, Snohomish, 360-668-2303 or 425-743-3333
 - Rinker Materials, Everett, 425-355-2113

Snohomish Health District, 425-339-5250

- Post-flood septic tank & well problems

U.S. Army Corps of Engineers, 206-764-3406

- Brochure and information on how to use sandbags



Snohomish County Departments

- **Department of Emergency Management, 425-388-5060**
 - Disaster supply kit preparation
 - Volunteer for a sandbagging crew
 - Road conditions and closures during a flood
 - Report dike/levee damage
 - Post-flood recovery assistance
 - Flood Warning System-general information
- **Planning and Development Services, 425-388-3311**
 - Floodplain location information and maps
 - Flood Hazard Specialist, 425-388-3311 x 2065
 - Inspection of flood damaged structures
- **Public Works Department**
 - Road Maintenance, 425-388-3411 x 7500 (or 800-562-4367 x 7500)**
 - Pre flood information on roads commonly flooded.
 - Report road/bridge damage
 - Solid Waste Management, 425-388-3425**
 - Flood Debris Questions
 - Surface Water Management, 425-388-3464**
 - Floodplain location information and maps
 - Bank Stabilization Assistance
 - Urban flood and drainage assistance: 425-388-6467
 - Watershed Stewards for general watershed questions

CONTACT INFORMATION

For Residents Living Within City Limits

If you live within the city limits of any of the following cities, call or email the city directly for flood/floodplain information.

• City of Gold Bar

107-5th Street, Gold Bar, WA 98251; Phone: 360-793-1101; Fax: 360-793-2282; email: j.light@cityofgoldbar.us

For building and floodplain information contact: John Light, Gold Bar Public Works Director (360-793-1101) or email j.light@cityofgoldbar.us

• Town of Index

PO Box 88, Index, WA 98256
Phone: 360-793-2488

For building and floodplain information contact: Kim Peterson, Water Distribution Manager (360-793-7767) or email index@premier1.net

• City of Monroe

806 West Main Street, Monroe, WA 98272; Phone: 360-794-7400; Fax: 360-794-4007

For information on special flood hazard areas and flooding problems contact: Monroe Engineering Department (360-863-4513) or email jcook@ci.monroe.wa.us

To report the following non-permitted floodplain activities:

- Building without a permit, contact: Building Department (360-863-4532) or email kshaw@ci.monroe.wa.us
- Filling or grading without a permit, contact: Monroe Engineering Department (360-863-4513) or email jcook@ci.monroe.wa.us
- Dumping debris into city drains, contact: Public Works Dept. (360-794-6100) or email jpetrick@ci.monroe.wa.us

Monroe Library (1070 Village Way) has flood maps and flood protection information available.

• City of Snohomish

116 Union Ave, Snohomish, WA 98290-2943; Phone: 360-568-3115; Fax: 360-568-1375; website: www.ci.snohomish.wa.us

For building and floodplain information contact: City of Snohomish Planning & Development Services (360-568-3115).

• City of Stanwood

10220 270th St NW, Stanwood, WA 98292; Phone: 360-629-2181; Fax: 360-629-3009

For building and floodplain information contact: Les Anderson, Stanwood Public Works Supervisor (360-629-9781) or email les@ci.stanwood.wa.us

For non-emergency assistance or information during floods contact: Stanwood Fire Department (360-629-2184).

• City of Sultan

319 Main Street, Suite 200, Sultan, WA 98294; Phone: 360-793-2231; Fax: 360-793-3344; website: www.ci.sultan.wa.us

For building and floodplain information contact: City of Sultan, Building Department (360-793-2231) or email: cityhall@ci.sultan.wa.us

For sand and sandbag information contact: Sultan Public Works (360-793-1262 or cellphone 425-508-8987).



In all emergency situations,
dial 9-1-1

BASIC FLOOD INFORMATION

What is a Floodplain?

In simple terms, a floodplain is the typically flat land area on either side of a large river or stream. A floodplain is created by a river as it meanders across a wide area over thousands of years. With five major river systems, floodplains are a large component of the Snohomish County environment. Flooding occurs when large volumes of water cannot be contained in the normal channel. As these flood waters spread across a floodplain, the water slows as its energy is dissipated resulting in lower flood flows downstream, reduced stream bank erosion, and improved groundwater recharge. Good stewardship of the land provides a safer environment.

Floodplains tend to be scenic areas, often suitable for farming. They provide important natural and beneficial functions such as flood water storage, aquatic habitat, and water quality benefits. There are several parks and wildlife reserves in Snohomish County that preserve these natural floodplain functions including:

- Al Borlin Park in Monroe
- Bob Heirman Wildlife Preserve
- Spencer Island
- North Creek Regional Park
- Portage Creek Wildlife Area

The Federal Emergency Management Agency (FEMA) defines a floodplain as the total area subject to inundation of floodwaters which has a 1% chance of occurring in any given year, a 100-year flood. These 100-year floodplains are known as Special Flood Hazard Areas (SFHA) and include the river, stream channel, lake, and the adjacent lands subject to this potential flooding.

In an effort to promote public safety and prevent flood losses, Snohomish County regulates how and where development can occur in the floodplain. Snohomish County's flood

hazard regulations are part of the County's Critical Area Code (Chapter 30.65, Snohomish County Code) and are available online via the County's website and through the Sno-Isle public library system. Most cities have similar codes regulating how and where floodplain building can occur.

Floodplain regulations require obtaining a Flood Hazard Permit for ANY action involving fill, grading, new construction, substantial improvements, repair, or alternations to a floodplain property. Additionally, any floodplain structure that is improved by more than 50% of its market value, through repair or remodel, must be elevated to a designated height to protect it from floodwaters.

For complete information about building, remodeling, and development in the floodplain, or to report potential floodplain permit violations contact the Flood Hazard Specialist at Snohomish County Planning and Development Services (425-388-3311), or if you reside in a city, call your city's Planning or Building Department.

Flood Insurance

How To Get It. The National Flood Insurance Program (NFIP) provides the only dependable and affordable insurance against flood damage to buildings. Standard homeowner's insurance policies will not cover losses by flooding, but most insurance agents also sell flood insurance.

Federal disaster assistance is only available after the President declares a disaster, and disaster assistance rarely covers all flood-related losses. Flood insurance is an affordable way to provide financial flood protection for your home. In Snohomish County, NFIP flood insurance averages around \$600 a year per policy in SFHA's. Call your insurance agent or FEMA or visit www.fema.gov/business/nfip for more information.

There is a mandatory 30-day waiting period on all new flood insurance policies. Don't wait until it's too late!

Flood Loss Claims. If your property does sustain flood damage, the following steps can assist in filing a claim:

- Report flooding claim to your insurance agent as soon as possible.
- If it can be done safely, take photos of interior/exterior flood damage and photos indicating water level and compile an inventory of damaged/missing goods, include purchase information, if known.
- Keep receipts for costs incurred if displaced from your home.

Increased Cost of Compliance (ICC). ICC is an additional insurance resource available through your flood insurance company and FEMA, to assist homeowners to mitigate future flood losses for buildings covered by a Standard Flood Insurance Policy. When a structure sustains a flood loss and the community declares the building to be substantially or repetitively damaged (greater than 50%), ICC coverage provides up to \$30,000 directly to property owners to implement mitigation measures required to comply with local and State floodplain management requirements.

FLOOD FACT

- *A home located in the "100-year floodplain" has a 26% chance of being flooded over a 30-year period.*

AVOIDING FLOOD DISASTERS—WHAT YOU CAN DO

BEFORE a Flood

Be Prepared

- Know if you are in a flood-prone area. County residents see page 2 for who to call; City residents see page 3.
- Keep basic emergency equipment on hand and easily accessible: portable radio, emergency cooking equipment, flashlights, fresh batteries, non-perishable food, drinking water, essential medicines, and a first-aid kit. A small NOAA weather radio, available at electronics stores, provides continuous weather and flood information.
- Buy sand and sandbags and learn how to use them. Check their condition periodically. A brochure is available from the U.S. Army Corps of Engineers.
- Share information with neighbors on previous flood experiences and preparedness.
- Photograph and document property and belongings for insurance purposes.
- Buy flood insurance well before the flood season.

Review/Update Flood Procedures Each Year (at home and work)

- Find a safe route from your home or business to high ground.
- Establish phone contacts and meeting places for family members who may be separated by flood waters.
- Be sure everyone knows emergency flood phone numbers and when to call.

- Make arrangements for housing if you need to evacuate.
- Be sure everyone knows how and when to turn off gas, electricity and water lines.
- Make arrangements for moving livestock to higher ground.
- Make arrangements for care of your pets.

Floodproof Your Home

- Elevate/relocate your utilities or entire home out of harm's way.
- Install backflow prevention devices in sewer connections to prevent floodwaters from backing up into sewer drains and entering your home.
- Build and install flood shields for doors and openings to prevent entrance of floodwater.
- Place openings in foundation walls to allow the entrance and exit of floodwaters and prevent foundation failure. Have sandbags and other protection items (plastic sheeting, plywood, portable pumps) ready.
- Place/install a sump pump with backup power in crawl spaces or basements.
- Ensure that underground and above ground storage tanks are fully sealed and secure.

Minimize Damage

- Store valuables and important documents at higher elevations (second story if possible).
- Store household chemicals above flood levels.

- Secure anything that might float or move during a flood.
- Close storm shutters and sandbag doorways.
- Move livestock, vehicles, and RV's to higher ground.

Prevent Localized Flooding

- Don't dump debris in creeks, streams or channels.
- During periods of heavy rain, keep drainage ditches and storm drains that are on or near your property, free of obstructions.
- During rain storms, observe the natural flow of water on your property. Look for areas where water concentrates and where erosion and water damage are most likely to occur. Locate small buildings (storage sheds), debris, grass clippings, or anything else that can be damaged or block water flow, out of these areas.
- Report any apparent illegal actions within the floodplain (such as non-permitted development or dumping) to the County or the city you live in.

FLOOD FACT

- *Within a four state region, Snohomish County has one of the highest number of properties that have suffered repetitive flood damage. Reducing the number of repetitive flood losses is a high priority for Snohomish County.*

DURING a Flood

If Indoors:

- Keep a battery-powered radio tuned to a local station; follow all emergency instructions. Call Snohomish County Department of Emergency Management for current information on flood levels and road closures.
- When flooding is imminent, but only if time safely allows:
 - Turn off all gas and water service at the main valve.
 - If your main electrical switch is in a dry area, turn it off. If it is not, ignore it and get to safety.
 - Be prepared to evacuate. If advised to evacuate, do so immediately. Evacuation is much simpler and safer before flood waters become too deep for ordinary vehicles to drive through.
- If you are caught in your building by rapidly rising water, call 9-1-1 for help. Move to a higher floor or to the roof. Take warm, weatherproof clothing, a flashlight, a portable radio, and a cellular phone.

If Outdoors:

- Stay out of flooded areas.
- Climb to higher ground and stay there until flood waters recede or until you are rescued.

FLOOD FACT

- *Most flood related deaths occur when people drive on flooded roads.*
- *If you can't SEE the road under the water, don't drive on it!*

If Driving:

- Do not drive where water is over the road. Flooded roads may obscure high hazard situations such as washouts. Do not drive past barricades.
- If you come to a flooded area, turn around and go another way immediately.
- If your car stalls in a flooded area, abandon it as soon as possible. Walk to higher ground from the direction you came.
- Keep your radio tuned to a local station and listen for flood updates and road closures.
- Follow recommended evacuation routes. Back roads and shortcuts may be blocked by flood water. Most deaths from floods occur when people drive on flooded roads.

Contact phone numbers/ websites for flood assistance are listed on pages 2 and 3.

AFTER a Flood

- Flood dangers do not end when the water recedes. Listen to local radio or television and do not return home until you hear it is safe. When you do return home use extreme caution.
- Before reentering a building, check for structural damage that could cause the building to collapse. Be alert for potential gas leaks, electrical shorts, and live wires.
- Use flashlights instead of flame lanterns/candles when entering a building that has a gas stove or heater.
- Have a professional check your heating system, electrical panel, outlets and appliances before use. Call the gas company to have gas service turned on again.
- Contact your insurance agent for flood loss claims. Document losses, photograph damage, record repair cost estimates.
- Contact your local building official for damage determinations and permit questions.
- Pump out flooded basements gradually (about one-third of the water per day) to avoid structural damage.
- Make a permanent mark on your residence or property to show the height reached by flood waters. This mark can be used by you to correlate the river gage readings with water levels on your property and by government agencies to analyze flood damages.
- Watch out for small animals or rodents that may be hiding under debris.
- Financial assistance may be available following a federal disaster declaration. Call the Dept. of Emergency Management and listen to the radio or television for information.

SNOHOMISH COUNTY PROGRAMS AND ASSISTANCE



Community Rating System

The Community Rating System (CRS) is a FEMA program that provides substantially reduced flood insurance premiums to floodplain residents in communities that go above and beyond the minimum FEMA standards for floodplain management. Lowered premiums are offered because the long term cost of flood disasters on these communities is reduced. Snohomish County became a member in the CRS program in 2006; now County floodplain residents receive a 25% discount on their flood insurance policies, providing an average savings of \$200 per flood insurance policy per year in SFHA's. Monroe, Sultan, and Index also participate in CRS.

Cooperative Bank Stabilization Program

Fast moving flood water and flood debris can erode and scour river and stream banks at a rapid rate which can undermine structures or cause substantial property loss. Through its Cooperative Bank Stabilization Program, Snohomish County provides landowner assistance to evaluate the erosion potential of waterfront properties, and to work with property owners to find solutions before flood damage occurs.

For more information on these programs and assistance, contact Public Works Surface Water Management at 425-388-3464

Home Elevations and Acquisitions

Snohomish County will apply for federal grants on behalf of homeowners who wish to elevate or relocate their homes, or have their property acquired due to repeated flood damages. The grants are competitive and often take several years to receive. If you have had floodwaters damage your home two or more times within the last 10-20 years, you may be a good candidate for a home elevation grant. Funding for property acquisitions is more difficult to acquire, and will generally be limited to places where channel migration is threatening a home. Contact Snohomish County Public Works, Surface Water Management for more information on participating in the program.



Urban Flood and Drainage Assistance

Drainage investigators respond to citizen requests for assistance with drainage problems within Surface Water Management Fee Areas and not related to river flooding. Investigators evaluate the cause of the problem, recommend potential solutions and provide a written report to the citizen.

Facilities inspectors inspect and maintain County-owned drainage facilities and provide technical assistance to homeowner associations and citizens on the maintenance of private drainage facilities.

Watershed Stewards Program

Watershed Stewards work in partnership with citizens and agencies to protect and enhance water quality and aquatic habitats within the County's Surface Water Management Fee Areas. If your property is vulnerable to floodwater damage contact a Steward, they can put you in touch with appropriate county staff to assess damage potential and possible solutions, BEFORE flood damage occurs.

Map Modernization

Snohomish County is participating in FEMA's Flood Map Modernization program to provide more accurate and up-to-date flood hazard information and help communities be better prepared for flood disasters. New digital flood insurance rate maps for Snohomish County and its Cities are being prepared that will more accurately depict flood hazard areas. These maps will also reflect new detailed flood studies now underway on the Skykomish River. To find out more or to determine your flood risk contact Snohomish County Public Works Surface Water Management or Planning and Development Services or your City.

Contact phone numbers/websites for flood assistance are listed on pages 2 and 3.

SNOHOMISH COUNTY FLOOD WARNING SYSTEM

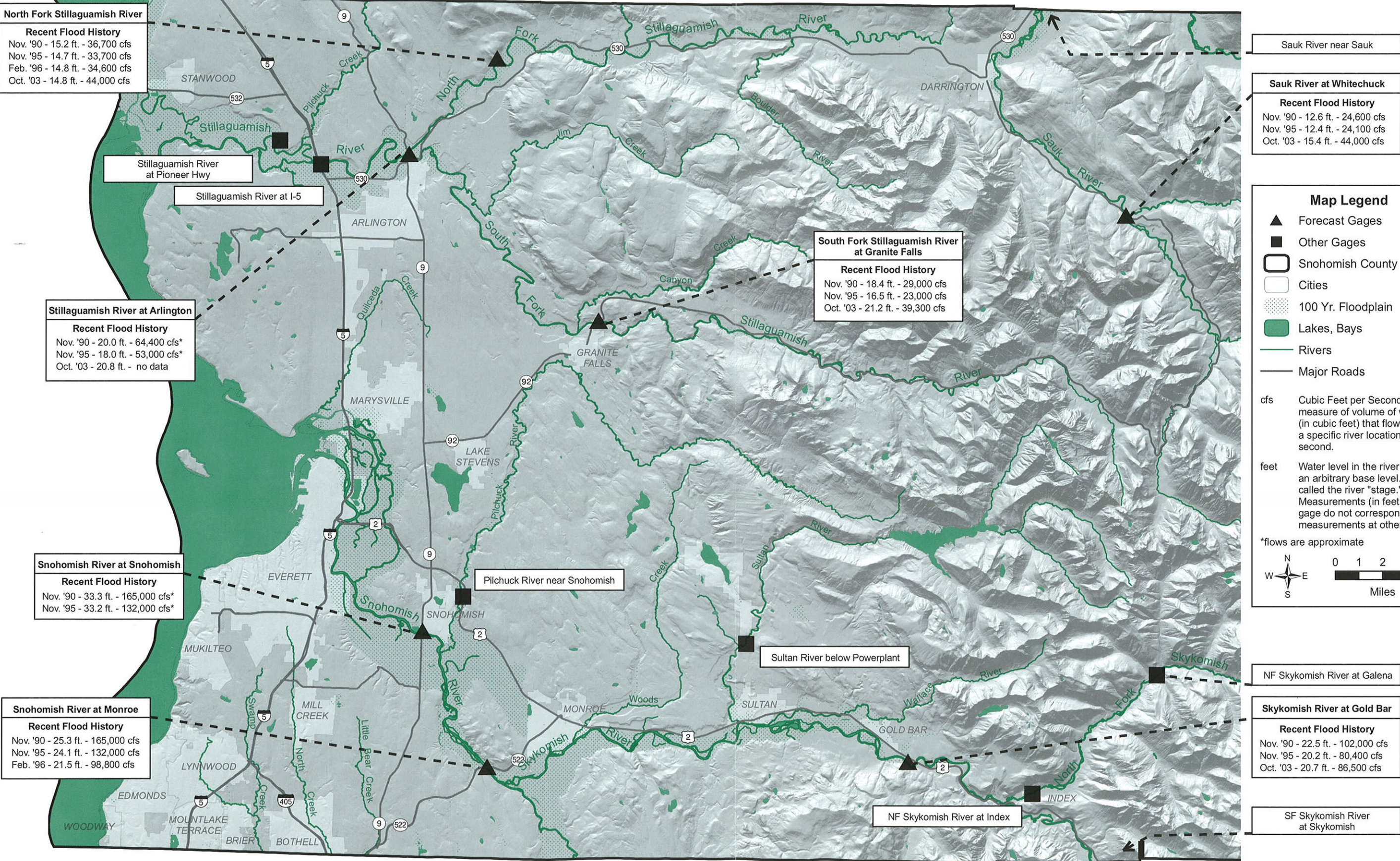
Summary of Flood Conditions at Gage Sites (see map)

This chart reflects "on-the-ground" conditions that correspond to rising water levels at selected river gage sites throughout the county. The adjacent map shows gage locations (shown as ▲) described in the chart. Use this chart in combination with the map to locate a gage site and see what typically happens in that area at each flood phase as river levels rise.

Flood Phase Number		River Level in Feet	Corresponding "On-the-Ground" Conditions
Sauk River above White Chuck			
2	8'		– Isolated bank erosion and tributary stream flooding possible.
3	11'		– Flooding along Clear Creek Road, bank erosion and channel migration throughout river.
4	13'		– Extensive inundation downstream of Darrington along with large scale channel migration. – Water over SR 530 at the Suiattle River.
Stillaguamish River, N Fork			
2	13'		– Oso Loop Road flooded, minor bank erosion occurring.
3	14'		– Water over SR 530, county roads in Cicero and flooding in Swede Heaven area.
4	15'		– Water over SR 530 at Oso, extensive inundation and bank erosion throughout valley.
Stillaguamish River at Arlington			
2	14'		– Moderate overflow begins in the Florence and Norman areas. – Water over Pioneer Highway east of Silvana.
3	17'		– Norman Road and Marine Drive closed.
4	19'		– Water crosses the road at Island Crossing. – SR 530 northeast of Arlington under water. – Silvana completely cut off. – Moderate to severe flooding occurs near Stanwood.
4	20'		– Major flooding throughout the floodplain. – SR 530 east/north of Arlington impassable in places. – Major overtopping of dikes and banks occurs.
Stillaguamish River, S Fork			
2	14'		– Isolated bank erosion and tributary stream flooding.
3	16'		– Flooding downstream of Granite Falls in Jordan Road/Blue Spruce area.
4	18'		– Flooding in Rivershore Lane/Robe Valley. – Water over Jordan Road near Jim Creek. – Extensive bank erosion throughout river. – Mountain Loop Highway closed.

Flood Phase Number		River Level in Feet	Corresponding "On-the-Ground" Conditions
Skykomish River at Gold Bar			
2	15'		– Flooding begins over low pastures near Monroe.
3	16'		– Water over Ben Howard Road. – Sportsmen's Park flooding.
3	17'		– River banks overflow, erosion occurs. – Some flooding occurs in Sultan.
4	19'		– Farms and homes near Monroe flood. – Severe river flooding occurs in Sultan.
4	21'		– Major flooding occurs in all areas.
Snohomish River at Snohomish			
2	25'		– River bank is full. – Old Snohomish-Monroe Highway near Snohomish begins to flood.
3	28'		– Riverview Road begins to flood.
4	30'		– River level nears top of all dikes. – District 13 berm begins to overtop.
4	31'		– Major flooding begins in District 13 and Ebey Slough. – Lowell-Snohomish Road closed.
4	32'		– Dike overtopping begins in French Slough and Upper Marshland areas.
4	33'		– Major flooding begins in all areas.
Snohomish River at Monroe			
2	15'		– Some overbank flows into low lying pasturelands along the river.
2	19'		– Extensive flooding outside of leveed areas. – Old Snohomish-Monroe Highway closed.
3	20'		– River near crest of levees.
4	21'		– Levee system begins overtopping
4	22'		– Major flooding in all areas. – Extensive levee overtopping throughout the valley. – All valley roads and highways closed. – High risk of levee breaches.

SNOHOMISH COUNTY FLOOD WARNING SYSTEM - "REAL TIME" GAGE LOCATIONS



SNOHOMISH COUNTY FLOOD WARNING SYSTEM

Because of the county's numerous large rivers that experience frequent and severe floods, Snohomish County operates a Flood Warning System to provide information to residents before, during and after a flood event.

The flood warning system is comprised of a network of rain gages and river level gages (see river gage locations on map). Information from river gages and forecasts from the National Weather Service are used to make flood predictions.

During heavy rains, Snohomish County officials begin a "flood watch." The Department of Emergency Management (DEM) activates the Emergency Operations Center (EOC) at its Everett headquarters, and begins monitoring conditions. The EOC issues warnings about the severity of expected flooding for each individual river.

National Weather Service Flood Warning Terms

Flood Watch: When a flood watch is issued, flooding is possible in a specific area within 12-36 hours, but its occurrence, location and/or timing is uncertain. Flood watches are issued by county, not for specific rivers.

Flood Warning: A flood warning is issued on specific rivers and indicates that flooding is imminent in 12 hours.

Flood Statement: A flood statement is issued once a flood has occurred. The statement is updated every six hours, giving current status of flooding conditions.

Warnings are updated based on continuous river flow and flood stage (water level) data received from the river gages. Field staff and volunteer "river watchers" are also dispatched to provide "on-the-ground" information about river bank and road conditions.

During the flood watch, close coordination occurs between the County's Departments of Emergency Management, Public Works, and Sheriff's Office. The County also coordinates with the U.S. Army Corps of Engineers

about the status of dikes, and with emergency service agencies such as the Red Cross, to provide assistance to persons evacuated from their homes.

Agency responses occur in four phases depending on the severity of the expected flooding (see Flood Phase Chart for details). For information during floods, keep your radio tuned to a local radio station or contact Snohomish County Department of Emergency Management.

Flood Phase Chart

Floods can occur in any month, but most commonly occur between November and February during periods of heavy rain or rapid snow melt. During a flood, agencies respond in four phases depending on the severity of expected flooding, with Phase 4 being the most severe.

During Phases 2, 3, 4, flood updates and warnings are reported to police, fire departments, schools, other agencies, and news media.

1

- During Phase 1, actual flooding is rare.
- County staff are put on alert.
- Preparations are made to open the County's Emergency Operations Center

2

*corresponds to
official NWS
Flood Stage*

- Minor flooding and some road closures may occur.
- The County Emergency Operations Center opens.
- Staff begin monitoring river gages and flood conditions around the clock.
- Flood information phone lines are updated hourly with current river gage/river level information.

3

- Moderate to severe flooding, with numerous road closures and some levee overtopping can be expected.
- Investigation crews are sent out to monitor flood control facilities such as levees.

4

- All agencies respond in anticipation of major flooding/widespread damage.



FACT

Snohomish County river floodplains are created by five major river systems. All of these rivers have experienced Presidentially declared flood disaster events.

- Stillaguamish River
- Pilchuck River
- Sauk River
- Skykomish River
- Snohomish River

FACT

Snohomish County river floodplains are the second most flood prone in Washington State. Eleven major floods have occurred since 1980. The 1990 Thanksgiving flood, the October 2003 flood, and the 2006 Election Day flood are the largest floods on record to date.

In all
emergency situations,
dial 9-1-1

FACT

Flooding problems can result from all of the following:

- flood waters overtopping river banks;
- rapid shifting of a stream channel (known as channel migration);
- stream bank erosion; and
- failure of a flood control structure (i.e. dike, levee).